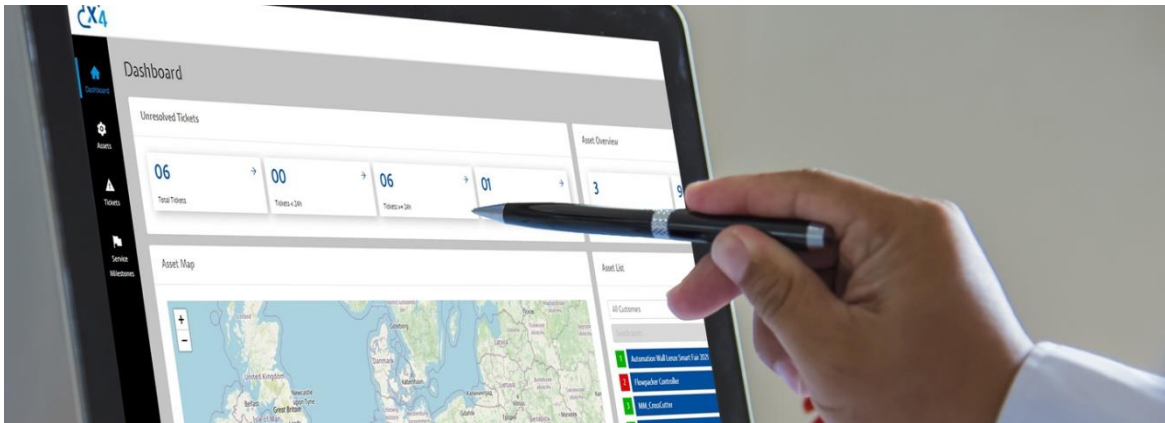


SaaS solution for the management of machines and plants



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1 Scope of service

This document describes the standard scope of service of the X4 Asset Performance Platform. This application is only available as a cloud solution.

1.1 Overview

The X4 Asset Performance Platform provides cloud-based services for easy management of machines and plants. A prerequisite for using the services is to properly set up a customer account. The cloud application is accessed via a browser. The cloud application displays responsive behavior on smartphones and tablets.

The X4 Asset Performance Platform offers services for the management of machines and plants. Such services include an asset management, a ticket management and cockpit. Furthermore, it is possible to manage user permissions linked to the customer account.

The standard functional range of the X4 Asset Performance Platform can be extended by further services that are normally chargeable. Such extended services may include monitoring and evaluation functions for machines and machine data, for example. By connecting the X4 Asset Performance Platform to our x4remote service it is possible to display real-time data of the machines connected to the internet in the X4 Asset Performance Platform.

Hardware and x4remote licenses are not part of the scope of service of the X4 Asset Performance Platform.

The scope of service of our x4remote can be found in the corresponding documentation.

1.2 Provision of the cloud service

Lenze's operations service takes care of renting and providing the IT infrastructure for the cloud service. With regard to the selection of the IT infrastructure, Lenze is guided by the number of machines, number of users and storage specified by the customer.

The provision is usually by renting from a hosting provider chosen by Lenze at its own discretion.

The systems operated by Lenze are generally available to the Customer daily from 0 - 24 hours minus the maintenance windows of the hosting provider and the own maintenance, installation and update times (operating time). We strive for trouble-free operation of the platform and its services and aim for availability of at least 99 % on an annual average.

The infrastructure is operated in a specific geographical region. At the time of writing this document, Lenze rents IT resources from Microsoft Azure for the cloud service. The data center is in Frankfurt (Microsoft Azure Datacenter region: Germany West Central).

1.3 Service description

The service description describes the scope of service of the X4 Asset Performance Platform and does not serve as a user manual.

1.3.1 Header

The following functions are available in the header.

- Refresh: refresh the content of the page. The current data on assets, ticks, statistics, etc. are updated.
- Settings: contains functions for the group administrator
 - Settings dialogue for the customer design: The theming of the X4 Asset Performance Platform user interface can be customized and adapted to your corporate colors. Main and side colors can be modified, and your company logo can be added. Also, a custom QR code logo. **This function can be accessed by administrators only.**
 - Manage the x4remote connections: Here it is possible to link an asset with x4remote (see also 1.3.9 Linking an asset with an x4remote data source) or refreshing a created link. **This function can be accessed by administrators only.**
- Language switcher: change the language between english and german.
- Notifications: Here you will receive notifications about incoming tickets or tickets assigned to you or when a deadline is about to be reached.
- Display of the current user's name and profile management: each user has the option of managing their own data there (e.g. first name, surname, position, contact details, own user picture, password data, two-factor authentication).
- Logout button

1.3.2 Cockpit

The cockpit gives a structured overview of the most important information about the machinery. There is a filter to be able to show information about a specific customer only or about for selected customers. That customer filter is applied to all information displayed within the cockpit.

The cockpit shows an overview of the active tickets and the asset's location, if available. The respective location is marked on a map.

1.3.2.1 Ticket categories

The cockpit provides an overview of the number of tickets in the different categories. The categories include

- Open tickets
- Older than 24 hours
- Last 24 hours
- Critical priority
- High priority

By clicking on one of the categories a filter is applied to that category and only tickets from that specific category are displayed.

1.3.2.2 Ticket overview

Depending on the active filters (customer filter and category filter) the ticket overview shows the respective tickets. By clicking on one of the tickets you will be linked to the ticket's detailed information (see "Tickets").

1.3.2.3 Map with asset locations

On the cockpit, there is a map showing the asset locations, provided that the coordinates of the assets are maintained properly (see "Assets"). By clicking on one of the locations the names of all assets of that location are displayed. By another click on the name of one asset the detail information about that specific asset are shown (see "Assets").

1.3.3 Assets

In the "Assets" section, the administration of the assets takes place. "Assets" is considered as a general term here. It is up to the user to decide what an asset is (machine, production line, sensor, production location, operating instructions, etc.). The asset structure is customizable, too. A specific machine can be set as the top level or the production plant, for example.

It is possible to filter the information by customer, if desired. Depending on his/her permission role the user can see specific customers that can be filtered. This customer filter affects all information shown for an asset.

It is also possible to provide information for describing an asset, including:

- Detailed information such as nameplate information, manufacturer, year of production, address of the manufacturer's website, serial number and much more data.
- Formattable, detailed textual descriptions
- An image of the asset (JPG or PNG format)
- Files, for documents, drawings, images, videos

1.3.3.1 Asset tree

The assets are presented in a tree topology here. The user can navigate within the asset tree in order to reach the linked sub-assets.

By clicking on the arrow preceding the asset name the linked sub-assets are expanded or collapsed and the asset's compact information are updated (see "Asset compact information").

In addition to the asset name, the asset type as well as the number of open and critical tickets for that asset are displayed. There also is a menu (three dots) for editing, deleting (also all sub-assets if desired) or duplicate the asset information or for adding a sub-asset (see "New Asset"). In addition, a top-level asset can be assigned to another customer. Furthermore, it is possible to edit an existing link to an x4remote data source or to create a link via an X500 gateway using MQTT.

The data connection via MQTT incurs additional costs.

A sub-asset can be moved within the same layer by Drag&Drop. This makes it very easy to define the order of the sub-assets.

1.3.3.2 Asset compact information

In addition to the asset tree, the image of the asset as well as some first information about the asset are displayed.

These information include:

- Detailed information and description of the asset
- A table with selected tickets. This table can be sorted by ticket name, creation date and priority.

The asset compact information are updated as soon as the sub-assets in the tree are expanded.

1.3.3.3 Asset detail information

Here, all available information that are assigned to an asset are accessible. Such information are divided into

- Formattable, detailed textual descriptions
- Information about the sub-assets
- Detail information with direct relation to the asset (empty data fields can be hidden)
- Product information (e.g. attached documents, videos and other files; link to the website of the product manufacturer)
- Open tickets
- Service milestones

It is possible to download a QR code providing a direct link to the asset's detail information. In that way, the detail information of the asset can easily be accessed through a mobile device.

Detail information can be changed, extended and deleted.

New tickets can be added manually.

1.3.3.4 New asset

Here, new assets and sub-assets can be created, and existing ones edited. The following functionalities are available:

- Import asset information from x4remote (only available in connected operation)
- Select a detail information template
- Set up a new detail information template
- Editing an existing detailed information template

A detail information template provides different data fields for entering the asset's detail information. It is possible to set up any number of detail information templates, to save them and to reuse them for future assets. In that way, the total amount of asset detail information can be tailored to the needs of the user. A plant or the highest asset level, for example, requires asset detail information that are different from the ones that a specific component or the lowest level of the asset tree requires. Detailed Information Template are available either globally for all customers or only for a single customer.

Note: If a new asset is similar or even identical in structure to an existing asset, it makes more sense to duplicate the existing asset instead of creating it from scratch. The duplicated asset can be edited after duplication. The menu item "Duplicate" can be reached by clicking on the three dots next to each asset.

1.3.4 Tickets

In the "Tickets" section, you will find a ticket management system. This last offers the following functionalities:

- A Kanban board with tickets
- Manual ticket creation
- QR code with direct link to ticket creation page
- Automated ticket creation in the Controller of the machine (only available in connected operation): Formatting options for the ticket text are available and can be specified.
- Ticket assignment to a person. This person needs to have an user account. If a picture of the person is stored for the user account, it will be displayed in the ticket comments.
- Notifications by email when a ticket has been assigned to an user
- Archiving of closed tickets in a knowledge database
- Ticket deletion

1.3.4.1 Ticket board

The Kanban ticket board has three columns, one for open tickets, one for tickets in process and one for closed tickets.

The tickets can be moved from one column to another by Drag&Drop.

The ticket order within the columns can be changed by means of a sorting function. It is possible to sort by:

- Newest first
- Oldest first
- Ticket name A-Z
- Ticket name Z-A

It is possible to filter the tickets by different criteria. The following filter criteria are available:

- Priority
- Customer
- Assets
- Assigned user
- Reporting person
- Date (Current month, Last month, Older than 24 hours, All starting from date)

There also is an "Archive" button, which can be used to show the archived tickets. A ticket is archived by clicking on the three dots next to the ticket name and by selecting "Archive" from the menu.

Finally, there is a free-text search that allows to search for any desired word/term. The "Ticket name" and "Ticket description" fields are considered by the search.

1.3.4.2 Ticket details view

By clicking on one of the tickets on the ticket board the ticket details view is opened. The ticket details view shows all ticket information, including:

- Ticket name
- Priority
- Status
- Asset
- Alarm code (if available)
- Creation date
- Creator
- Customer
- Recipient (assigned user)
- Ticket description (various formatting options are available)
- Solution description (if it is a closed ticket)
- Comments
- Documents (multiple files can be attached to the ticket)

As long as the ticket has not been closed, ticket details can be edited and added.

1.3.4.3 Ticket archive

The ticket archive shows all archived tickets in a well-structured tabular format. Archived tickets will remain available in a knowledge database, so that solutions for past problems can easily be looked up again.

By activating the "Archive" button on the ticket board the ticket archive is opened. When deactivating the "Archive" button in the ticket archive one will go back to the ticket board.

A ticket is archived by clicking on the three dots next to the ticket title on the ticket board and by then selecting the menu item "Archive".

There are the same ticket filters available as on the ticket board. As well, there is the same free-text search.

By clicking on the ticket title one will access the ticket details view.

On the right side, at the end of the table there is a menu (three dots) providing further actions. Here, an archived ticket can finally be deleted or restored. After restoring a ticket, it is again visible on the ticket board.

1.3.4.4 New ticket

Here, new tickets can be created. The following data fields must be filled:

- Customer
- Asset
- Title of the ticket
- Ticket description (various formatting options are available)
- Priority

After the ticket is created, you can add files.

1.3.5 Service milestones

The “Service milestones” section allows you to define rules based on which a ticket is automatically created. The rules can evaluate and link parameters of a machine to determine the status of a machine or components. In addition, milestones can be created on a time-based basis with a regular cycle (once, weekly, monthly, quarterly, annually, every 2 years).

This allows to create service tickets in time when parameters of a machine indicate that this is necessary or when it is foreseeable that a recurring maintenance appointment is due. This means that the installation of spare parts can be planned at an early stage.

1.3.5.1 Milestone board

The milestone board displays all created service milestones. You can switch between a tabular view and a calendar view. The table displays the most important information. This includes:

- Asset name
- Milestone name
- Milestone type
 - Condition-based (milestones based on rules)
 - Time-based (one-off, weekly, monthly, quarterly, annually, every 2 years)
- Interval
- Status
 - Active
 - Inactive
- Actions
 - Edit milestone
 - Delete milestone

The Service milestone order can be changed by means of a sorting function. It is possible to sort by:

- Milestone name
- Milestone type
- Interval

A search field for searching within the created service milestones is available.

Existing milestones can be inactivated/switched off. The filled milestone fields are retained. The milestone can be re-activated/enabled at any time.

In the calendar view, the respective active milestone and its name are displayed in a calendar. New service milestones can also be created, and existing ones edited in the calendar view.

1.3.5.2 New Service milestone

Here, new Service milestones can be created. The following data fields must be filled:

- Milestone type (Condition-based or Time-based)
- Customer
- Asset
- Ticket priority
- Milestone name
- Ticket header
- Ticket description
- Rule for milestone type Condition-based or cycle for milestone type Time-based (one-off, weekly, monthly, quarterly, annually, every 2 years)

1.3.6 Customers

Customer and user management is available in the Customers section. Customers and their data can be created and managed there. Users can also be created and managed.

It is possible to filter the information by customer, if desired. Depending on his/her permission role the user can see specific customers that can be filtered. This customer filter affects all information shown for an asset.

Only administrators can create and manage new customers and users.

1.3.6.1 Customer table

The customer table displays the most important customer information. This includes:

- Customer number
- Customer name
- Country
- City
- Street

The customer order can be changed by means of a sorting function. It is possible to sort by:

- Customer name
- Country
- City
- Street

A search field for searching within the created customers is available.

On the right side, at the end of the table there is a menu (three dots) providing further actions. Here, a customer can be edit.

1.3.6.2 New Customer

Here, new customers can be created. The following data fields must be filled:

- Customer number
- Customer name
- Phone
- Location Address
 - Zip Code
 - City
 - Street and number
 - Country
 - Internal postcode
 - Customer e-mail
- Invoice Address
 - Selection field "Same as location address"
 - Zip Code
 - City
 - Street and number
 - Country
 - Internal postcode
 - Customer e-mail
- Shipping address
 - Selection field "Same as location address"
 - Zip Code
 - City
 - Street and number

- Country
- Internal postcode
- Customer e-mail

1.3.6.3 User and Contacts

The user table displays the most important user information. This includes:

- First name
- Last name
- Position
- Phone
- E-mail
- Customer

The user order can be changed by means of a sorting function. It is possible to sort by:

- Last name
- Position
- E-mail
- Phone
- Customer

A search field for searching within the created users is available.

On the right side, at the end of the table there is a menu (three dots) providing further actions. Here, a user can be edit.

1.3.6.4 New User

Here, new users can be created. The following data fields must be filled:

- First name
- Last name
- Position
- Internal postcode
- Phone
- E-mail
- Employee of (the user must be assigned to an existing customer)
- Access Rights
- Assigned role (the roles "Manager", "Guest", "Group administrator" and "User" are available)
- Select box "Active User" (a user can be activated/deactivated)

1.3.7 Connected and non-connected operation

The X4 Asset Performance Platform can be operated as a **connected** or **non-connected** solution.

In **connected** operation, information's are processed by the controller of the machine. In the event of an error, error tickets are automatically created in the ticket management system, for example. The system structure can also be imported from the controller. To do this, the controller must provide the machine structure as an OPC UA device information model.

The **connected** operation requires the machine to be connected to x4remote via a X500 gateway. In that case, the X4 Asset Performance Platform integrates the respective information from x4remote. That means that all functionalities available on x4remote are also available on the X4 Asset Performance Platform in case of **connected** operation. For the scope of service of our x4remote solution, we refer to a separate documentation.

Alternatively, a link to a machine can also be established via an X500 gateway using MQTT.

The data connection via MQTT incurs additional costs.

In **non-connected** operation, no information is processed by the controller. In that case, the machine is not connected to x4remote via a X500 gateway. All information, including the error tickets, needs to be entered manually in the X4 Asset Performance Platform. The scope of functions of our x4remote solution is not available in **non-connected** operation.

1.3.8 Creating an administrator account

During the set-up process of your X4 Asset Performance Platform, Lenze is also setting up an administrator account for you. The administrator gets access to additional functions that a normal user will not have. Those functions are:

- Customizing the branding (colors and logo)
- Set your own QR code logo
- Creating further customers and users (Customer and User management)
- Linking an asset with an x4remote data source (connected operation)

1.3.9 Creating an administrator account

The administrator has the option of linking an asset to an x4remote data source. This creates a connected operation. See also "Connected and non-connected operation".

Note: If an asset is linked to an x4remote data source, this cannot be undone. The link can be changed but not deleted.

Prerequisites: The following information must be available to link an asset to an x4remote data source.

- A user (username & password) with access to the X500-Gateway of the machines to be connected within x4remote.
- At least either a "Cloud Notify" license or a "Cloud Logging" license must be available for the machine or x500 gateway.

It is recommended that the user only has access to **one** x4remote Company. When the X4 Asset Performance Platform queries device data from x4remote, x4remote returns all X500-Gateways and their data sources (Data Sources / PLC's) to which the user has access. Also, across multiple x4remote companies. So, it could happen that gateways appear in the list to which one should not have access in this group.

1.3.10 API and connection to third-party systems

The x4 Asset Performance Platform has a REST API (application programming interface). This enables a connection to existing IT systems, such as ERP or CRM. The API enables secure and bidirectional communication between systems that use this technology. As the x4 Asset Performance Platform is a cloud platform, the services must authorize each other. Several authentication mechanisms are supported. Only cloud-2-cloud environments can have secure bidirectional communication. The connection requires the definition of a "contract" between the systems, specifying who is the master for a particular field, what type of data is to be used, how it can be converted if necessary and how synchronization conflicts can be resolved.

1.4 System requirements

Lenze's operations service takes care of renting and providing the IT infrastructure for the cloud service. A browser is required to access the cloud service. The cloud application displays responsive behaviour on smartphones and tablets.

1.5 User manual

The user manual for the X4 Asset Performance Platform can be found under the following link: [User Manual X4 Asset Performance Platform](#)

1.6 Customized adaptations and extensions

In principle, Lenze can develop customized adaptations or extensions on that cloud solution in a corresponding project.

However, **this** service description does not cover any customized adaptations or extensions, as they can be different from project to project.

Feel free to contact us at any time you require customized adaptations or extensions.

1.7 Terms of use

The general terms of use for the X4 Asset Performance Platform are available online: [Terms&Conditions X4 Asset Performance Platform. You will find the terms of use at the bottom of the page under "General information".](#)

1.8 Data protection notices

The data protection notices for the X4 Asset Performance Platform can be found under the following link: [Privacy Policy X4 Asset Performance Platform](#)

1.9 Open source statement

Lenze appreciates the importance of the use of open-source software and is dedicated to contributing back to the open-source community. The software we are developing may be utilizing certain software from the open-source community, which is subject to the applicable open-source licenses. We believe in using open-source software allows us to create better products for our customers. As we work with open-source software, we continue to contribute back to the open-source community.

The listing below provides an overview of the open source software and the respective licenses that we may utilize in our Asset Performance Platform: [Open-Source Statement X4 Asset Performance Platform](#)

FEEDBACK



Your opinion matters to us

This service description was created to the best of our knowledge in order to give you the best support when working with our products.

We may have missed that goal in some cases.
In case you have any suggestions for improvement or any criticism, please send a short e-mail to:

x4-feedback@lenze.com

Thank you for your support.

Your Lenze Application Software Standards Team

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